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FAMILY LYCEUM.

JOSIAH HOLBROOK, EDITOR.

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EVENING ENTERTAINMENTS.

NINTH EVENING.

Mr. Oakley, having assembled his children around him as usual, resumed his descriptive narration thus:—

What I have already told you respecting the savage tribes must have convinced you, that the simplicity and purity of manners, which we seem inclined to expect from mankind in a state of nature, are nowhere to be found. There have been philosophers, indeed, who, dazzled by some few shining examples (which perhaps owe their lustre more to the contrast they present to the conduct usually pursued by their countrymen, than to their own intrinsic merit), have proposed the savage tribes as models upon which we might form our characters. But these philosophers would be amongst the first to flee from such society, were they placed in the midst of it. The savages, it is true, generally lead a more simple and sober life than those nations which have the means of indulging in luxury. But, on the contrary, to what gross vices are they not addicted! In what misery does their ignorance plunge them! Is it not then a greater benevolence to teach them civilization, by degrees to instruct them in the arts, and show them the value of industry; to lay before them the precepts of the true religion, and to impress upon their minds the benefits to be derived from study?

It appears that the people of the present age seem anxious to repair the wrongs done to the uncivilized world, by our half-civilized ancestors. Guided by an ill-directed zeal, the latter employed force to establish a religion in which meekness and mildness form the most prominent features, and imagined they were rendering themselves acceptable to the God of mercy by sacrificing their fellow creatures, because they naturally and justly refused to embrace a faith propagated with fire and sword, and repelled force by force.

The Europeans are much to be blamed for their violent and cruel conduct towards the people of the New World. They ill treated and subdued them without the least right to do so; and when these unhappy nations resisted their oppressors, the conquerors exterminated them as rebels, or sold them as slaves.

Their injustice has not been confined to America; thousands of unhappy Africans have been torn from their country and friends, and carried to the West Indies, there to linger out their days in painful labor, and subjected, moreover, to the stripes of cruel and hard taskmasters. This you know: but how will you be surprised to hear that the negroes themselves participate in this cruelty!

Caroline.—Is it possible, papa?

Mr. O.—Nothing can be more true. The negroes, from their indolence and their dislike of agriculture, are subject in unfavorable years to dreadful famines, which reduce these wretched creatures to such extremities, that numbers of them are glad to offer themselves for slaves, merely to escape perishing of hunger. In this case also, masters are allowed to give away or to sell the slaves whom they possess. There are negro merchants on the coast, who carry on a constant traffic in their sable brethren, and keep up a regular correspondence with other dealers in the interior of the country. But what is still more surprising is, that a negro, who has a large family of children, considers them a species of riches; because, if he is reduced to want, he can sell them. The negroes of Mandingo are so wealthy in slaves, that they sometimes possess whole villages which are inhabited with these unhappy people. When they want to dispose of any of these poor creatures, they just seize the first they happen to meet; the children are carried in sacks, and the men and women are literally packed up as large parcels, leaving them just room enough to breathe; and in this manner they are conveyed to the European factories, where they are disposed of. On the coast of Guinea there are regular negro merchants. When these latter have collected a sufficient number of slaves, they send them to markets established at certain places, where they are consigned to other dealers, who proceed with them to the coast, sometimes a distance of three hundred miles. It is chiefly to the Gold Coast that the slaves are brought in numerous companies to be shipped. The animosity with which the negro tribes make war upon each other is too well known; and there is no nation in which such cruelties are inflicted on prisoners by the conqueror: a great part of them he sells for slaves; and such as he cannot dispose of he massacres, or mangles in the most atrocious manner; sometimes cutting open the face, at others tearing off the lower jaw, which he hangs up as a trophy. It is often the case, that on the decease of a rich man, all the slaves who attended upon him are put to death. Is it then wonderful that hardness of heart should be the predominant feature in the character of a people among whom such barbarities are committed? There are, however, some exceptions to these observations. The negroes of Foulah are a gentle race; and there are other tribes, which, in approaching to something like civilization, have acquired some of its virtues. They have established a different kind of traffic from that of their sable brethren, whom we have already noticed. They manufacture cotton, stuffs, mats, fishing nets made from the bark of trees, baskets, &c.; and they trade likewise in salt, gold dust, and palm oil. They have much pleasure in a kind of dance, accompanied by the sound of several instruments, one among which is a kind of organ.

But speaking generally of this race of men, we must confess, the negro is cowardly and cringing so long as he is impressed with fear: but no sooner is he armed with authority, than he becomes the most cruel of tyrants. In the colonies, where it is sometimes found necessary to commit the superintendance of the negroes to the most trusty of their own number, it is observed that this overseer enforces obedience with a severity which far surpasses that of the whites; even those whom the owner places for instruction under the more aged negroes, are treated by the latter with the greatest harshness.

But how deeply the evil passions of the soul are rooted in the breast of the negroes, may be ascertained by the fact of their having been known to poison themselves and their whole family, in order to be revenged upon an inhuman master.

Mr. Oakley's children shuddered as their father concluded this speech, but they were too much shocked to make any observation upon the subject, and he resumed his melancholy detail in the following words:—

But how, my children, will you believe what I am about to add? It is not a poison which instantly destroys that they administer. No, it is one lingering, and consequently painful in its effects, in order that the self-destroyer and the murderer may enjoy the grief and dismay of his master, as he daily witnesses the increasing indisposition of those beings whom he has perhaps bought at a large price, and whose death will naturally be a prodigious loss to him.

Gustavus.—Impossible, papa! It surely cannot be true: you must have been imposed upon.

Mr. O.—I am afraid, my dear Gustavus, it is but too true. Yet I believe we may attribute such systematic depravity, to the state in which they are plunged. Slavery acts powerfully in depreciating the human mind. The noblest of the human race (I speak of mental superiority) becomes, by lengthened slavery, insensible to the virtues and greatness of soul they once possessed. These, disdaining the servile arts by which the negro conceals the contempt that burns within his swelling bosom, resist for a time the authority of their master: but blows, repeated sufferings, and lengthened torture, subdue the mind, and it becomes gloomy and sullen. *The Christian slave*, with no cheering friend to mitigate his anguish, to soothe his sorrows, treated like the brutes; his once noble mind loses its tone, and an apathy, never to be entirely conquered, even by a total change of condition, takes possession of his mind. What then must be its effects on the untutored negro, who has no principle, no religious checks to these heavings of the heart? Revenge, deep and lasting, though clothed in smiles, takes possession of him: for the gratification of this passion he will sacrifice his life. This is what all cruel taskmasters may expect. On the contrary, the tender-hearted master, the benevolent planter, may rest assured, that humanity is more binding than cords, that words of kindness are more efficacious than stripes.

Gustavus.—But the slave trade is abolished, is it not, sir?

Mr. O.—Yes, partly so; indeed, among the English it is entirely forbidden. The other powers of Europe have not all agreed to this humane measure; but have promised at some future time that it shall be carried into effect. It would be highly improper to liberate entirely all those negroes who are already slaves, because they would be thrown upon society without the means of procuring a subsistence: but the condition of these is much ameliorated; and there is a charitable society in London, established for the education of negro children; and at Sierra Leone, upon the coast of Africa, an establishment has been founded, where free negroes can provide for themselves by their own labor.

Gustavus.—Have not the Americans also established a colony on the West coast of Africa?

Mr. O.—They have. It is called Liberia, and its capital is Monrovia, so named from Mr. Monroe, the President of the United States, during whose administration the colony was founded.

Gustavus.—What is its object?

Mr. O.—I believe it is designed to ameliorate the condition of the native Africans; and to afford an asylum to such of the colored population of the United States as may choose to emigrate to Africa.

Caroline.—Speaking of Africa, papa, is not our maccaw, who is trying to catch the gold fish in the vase, yonder, an African?

Mr. O.—No, Caroline, he is a native of Brazil, and was brought over by a friend of mine, who lived a long time in Rio Janeiro. He is of the species called Hyacinthine Maccaw, a very rare and valuable bird.

Caroline.—When will you tell us something about the American continent, its nations, and productions?

Mr. O.—To-morrow evening.

THE HORSE.

We have seen that no certain trace can be had of the original country of the horse. We can, therefore, only describe him as he is found at the present day, in the extensive plains of Asia and Africa, where he has been known to inhabit the deserts in a free condition, for many centuries.

It is supposed by some writers, that there were originally two distinct species of horses, namely, the southern and the northern breeds; the former from the eastern deserts, and the latter from the low lands of Europe. To this opinion we can by no means assent. Although these two breeds differ considerably both in bulk and general appearance, yet no specific distinction can be discovered, as they are precisely the same in their anatomical construction. Besides, they procreate indiscriminately, and their progeny are not hybrids, having the power of continuing their race, which is sufficient to convince us that they are but one species, altered by local circumstances. It is not in size, disproportion, or length of hair, that a specific difference depends, but upon some more distinct and obvious character. We have elsewhere shewn that dogs, in all their varied forms, from 'Indus to the Pole,' are but modifications of one species. The dog is infinitely more diversified in external character than the horse, and varies much more with what is considered its parent stock.

Malte-Brun is of opinion, that there were on the old continent, at least *three original races of horses.* The first, he supposes to have come from Great Bucharia, Persia, or Asia Minor: The second, the Mongolian, or Scythian breed; distinguished, as he says, by their dwarfish size; and appears to have originated in the steppes of Kirguises: The third, the Arabian courser. The varieties exhibited in these different kinds, are attributable to climate alone. It seems almost certain, that there are no wild horses in Arabia; and Mr. Bruce says, he never heard any person of veracity assert they had seen them.

From all that we read in the various travels in Asia and Africa, as well as other countries, it is evident, that the horses of almost every nation vary in a material degree from each other, both in external form and qualities. And we see what is the case in Britain, the small extent of which admits of but little variety of climate. In districts not far from each other, we find breeds differing as much, nay even more, than the Arabian and ordinary European horse. For these extremes, we may refer to the large Clydesdale breed, and the sheltie of Mull, and other islands of Scotland.

Horses of the European races, which have not been improved by Eastern blood, are very different indeed from the Asiatic courser, not only in form, but also in the texture and shape of their bones, which are usually round and porous, with thick joints. Their heads are fleshy and clumsy; their jaws ill-shaped; their bodies large and bulky; their bellies slack; their chests fleshy; their legs thick, swelled, and liable to various diseases; their tendons relaxed, the texture of their hair coarse and long, and their hides thick and spongy. The general proportions, also, are not nearly so regular as those of the eastern breeds. These differences unquestionably arise from the nature of their food, which, in most parts of Europe, is ill adapted to the nature and construction of their digestive organs. From this cause their constitution is debilitated, and in consequence their movements are rendered sluggish and ungraceful, and their fine natural ardor and spirit damped; so that they are in a manner stupid, and more vicious in their dispositions. On the other hand, we find that it is in the dry pastures of Arabia, Persia, Tartary, &c., that the horse is to be found, possessing superior strength and action, and that intelligence, spirit, and generous disposition, for which he is prized by every nation. The plains of Arabia and Persia, seem peculiarly fitted for the constitution of the horse, being sufficiently elevated above the level of the sea to render the pasture dry, aromatic, and wholesome, free from those saline particles which, it is true, give lustre to the fur. But, at the same time, this aridity makes it difficult for the horse to become habituated to any other country, whose climate may be essentially different, without undergoing some change in his form, and lessening those qualities for which he is chiefly valued. We need only mention as a proof of this fact, that the horses in the Northern Crimea, the country bordered by the Volga and the Kuma, the Black Sea, and the Don, seldom thrive until they have been pastured a year at least in Volgonea, Podolea, or the Ukraine.

Arabia, being sufficiently above the level of the sea, and having a surface composed of sand, mixed with a portion of vegetable mould, (a circumstance favorable to pasture ground), and the plains of Persia, situated still higher above the ocean, and consisting of a deposit of alluvial soil, resting on granite, are naturally dry, and by means of their heat attract moisture from the horse. On the other hand, the aromatic vegetation, which is there strong and succulent, drives from him those humors, the exudation of which is favored by the imperceptible, but continual perspiration, incidental to a warm climate. The consequence is, that the horses of those and other countries with similar pasturage, are completely free from the strangles, and other glandular diseases, which are so frequent and fatal to those of Europe.

These observations are in complete accordance with the opinions of the celebrated Bruce, the Abyssinian traveller, who, perhaps, had seen a greater variety of horses than any other individual. He says, 'At Gorri begins that noble race of horses, justly celebrated over the whole world.—They are the breed that was introduced here at the Saracen conquest, and have been preserved unmixed to this day. They seem to be a distinct animal from the Arabian horse, such as is seen in the plains of Arabia Deserta, south of Palmyra and Damascus, where the most excellent of the Arabian breed is supposed to exist, in the tribes of Mowalli and Annezy, which is about the thirty-sixth degree of latitude, whilst Dongola, and the dry country near it, seem to be the centre of excellence for this noble animal; so that the bounds within which the horse is at its greatest perfection, seems to be between the twentieth and thirty-sixth degrees of latitude, and between the thir-

tieth degree of longitude east from the meridian of Greenwich, to the banks of the Euphratus. For, in this extent of country, Fahrenheit's thermometer is never below fifty degrees in the night, nor in the day below eighty degrees, though it may rise to one hundred and twenty degrees at noon in the shade, at which point horses are never affected by the heat, but will breed as they do at Halfaia, Gorri, and Dongola, where the thermometer rises to these degrees.—These countries, from what has been said, must, of course, be a dry, sandy desert, with little water, producing short or no grass, but only roots, which are blenched like our celery, being always covered with earth, having no marshes or swamps, fat, soapy earth, or mould.'

Through ages of domestication, the horse in Britain seems to preserve this natural predilection for the dry food, which must have been the produce of his native plains. Any person at all acquainted with the habits of the horse, must have observed, that if in pasture ground, where there is a variety of rank, and also dry grass within his reach, he invariably prefers the latter; thus proving that dry food must have been his original nutriment.

To food and climate, therefore, must be principally ascribed the great diversity in the different races of this quadruped, in various countries. In support of this opinion, we have only to refer to the wild horses of South America, which were carried thither by the Spaniards. These are understood to have been principally of the Andalusian breed, which has continued to be the best produced in Spain since their first introduction by the Moors, in the year 710 of the Christian era, and who retained their dominion for nearly eight centuries. The horses of Andalusia, being directly sprung from Barbs, have retained many of the points of the Moorish breed. This is to be attributed to the local situation of that province, which is high, with a dry soil.—The savannas in South America, on which the wild herds browse, are high mountain tracts, with an arid soil and dry atmosphere, so that they retain all the points and qualities of their Spanish progenitors.

The introduction of the Asiatic horse into Europe, seems to be involved in as much obscurity as the question of the native country of this animal.

There can be little doubt that the wars in which the Greeks were engaged with the Persians, were the means of introducing many Asiatic horses into Greece. Xerxes having in his army 80,000 horses, principally stallions, must have left numbers behind, which would improve the breed, while the dry climate and pasturage would contribute to its being preserved in its original purity: as the defeat at Thermopylæ, and the occupation of it by the Persians, would have a tendency to improve their race; and the intercourse which that people had with the Levant would also assist. In this way, it is probable, the Asiatic breed was first brought into Europe.

The soil and climate must have operated beneficially as causes tending to improve the horses of Barbary, from Libya to the western border of ancient Mauritania, which is now called the kingdom of Morocco. These must have been introduced into Spain by the Carthaginians, after their conquest of that country, which they occupied for upwards of two centuries. And to the same causes may be ascribed the excellent breed of Sicily; from which two points the eastern breed may have found its way into Europe, by the south-west.

Compression of the Air.

The explanation of sound, which I have had the honor to present to your highness, leads me forward to a more particular consideration of air, which, being susceptible of a movement of vibration, such as that by which musical strings, bells, and other sonorous bodies, are agitated, transmits the concussion to our ears. It will be immediately asked, what is air? For it does not appear at first sight to be a material substance. As we perceive no sensible body in it, surrounding space seems to contain no matter whatever. We feel nothing; we can walk, and move every limb in it, without experiencing the slightest obstacle. But you have only to move your hand briskly to be sensible of some resistance, and even to perceive a stream of wind excited by that rapid movement. Now the wind is nothing else but air put in motion; and seeing it is capable of producing effects so surprising, how is it possible to doubt that air is a material substance, and consequently a body? For the terms *body* and *matter* are synonymous.

Body is divided into two great classes, solid and fluid. The air, it is evident, must be referred to the class of fluids. It has several properties in common with water; but it is much more subtile and fine. Experiments have ascertained that air is about 800 times more subtile and more rarefied than water; and that if air were to be rendered 800 times denser than it is, it would have the same consistency as the other fluid. A principal property of air, by which it is distinguished from other fluids, is its quality of being compressed, or reduced into a smaller space. This then is the essential difference between air and water: the latter is susceptible of no compression, but air may be compressed to any degree you please. The more the air is compressed, the denser it becomes; thus the air which occupied a certain space, when compressed or reduced to half that space, becomes twice as dense; if reduced to a space 10 times smaller, it is rendered 10 times more dense; and so on. I have already remarked, that could it be rendered 800 times more dense, it would then be as dense as water, and consequently as heavy; for weight increases in the same proportion as density. *Gold*, the heaviest substance with which we are acquainted, is likewise the most dense. It is found by experiment to be 19 times heavier than water: so that a mass of *gold* in the form of a cube of one foot, would weigh 19 times a mass of *water* of the same dimensions.—Now such a mass of *water* weighs 70 pounds; the mass of *gold* therefore would weigh 19 times 70, that is, 1330 pounds.—It follows, that were it possible to compress air till it were reduced to a space 19 times 800, that is, 15,200 times smaller, it would become as dense and as weighty as gold.

But it is very far from being possible to carry the compression of air to that degree. You may at first without difficulty drive forward the piston, but the farther you advance, the resistance becomes more powerful; and before you are able to reduce the air to a space 10 times smaller, such a force must be employed as would burst the tube, unless it were of uncommon strength. And not only would such a force be necessary to drive the piston farther, but an equal force would be requisite to keep it in that state; for on the slightest relaxation of the power, the compressed air would drive it backward. The more compressed the air is, the more violent are its efforts to expand, and to recover its natural state. This is what we call the spring or elasticity of the air.—[*Euler's Letters.*

Journal of Science.

The second number of the twenty-fourth volume of Professor Silliman's Journal of Science, is just received. This work is a most valuable storehouse of knowledge. It is the only work which contains a journal and description of American Natural History. The numerous able contributors which it has had from the commencement, together with the distinguished talents of the editor, have placed it in the first rank among the first scientific journals of the world. It ought to form a part of the library in every Lyceum and literary association in the country.

Meteorology.

It is highly encouraging to see the great number of papers engaged in publishing Meteorological Tables. By being condensed and compared, they will form interesting articles for ordinary reading, and valuable accessions to science.

We have received another communication on the subject from our valued correspondent, Mr. Williams, of Savannah, Geo. His seminary, which contains nearly three hundred pupils, by the interest they have taken in this subject, and Natural History, has conferred some valuable favors upon the public, while they were advancing their own improvement, and adding to their stores of knowledge. Numerous similar institutions have already followed their example, and more will undoubtedly follow in the same good cause.

Systematic Benevolence.

We are glad to be informed, that a Sabbath School in Boston has contributed twelve or fifteen dollars, to procure a school apparatus for a school in the Sandwich Islands. A school in Falmouth contributed five dollars towards a school agency in Greece.

THE ARTS.

Ink Powder.

Common liquid ink, the method of making which, we have already described, is not easily transported from one place to another; and, besides this inconvenience, it is apt to dry in the ink-holder. In bottles, unless well corked, it becomes decomposed and evaporates; and if the bottles happen to break, it may spoil clothes, or any other articles near it. For the convenience therefore of those who travel either by land or by sea, ink powder has been invented, which is nothing else than the substances employed in the composition of common ink, pounded and pulverized; so that it can be converted into ink in a moment, by mixing it up with a little water.

China or *Indian Ink*, which is employed for small drawings and plans, may easily be made by the following process. Take the kernels of the stones of apricots, and burn them in such a manner as to reduce them to powder, but without producing flame; which may be done by wrapping up a small packet of them in a cabbage leaf, and tying round it a bit of iron wire. Put this packet into an oven, heated to the same degree as that required for baking bread, and the kernels will be reduced to a sort of charcoal, with which an ink may be made similar to that brought from China.

Pound this charcoal in a mortar and reduce it to an impalpable powder, which must be sifted through a fine seive; then form a pretty thick solution of gum-arabic in water, and, having mixed it with the powder, grind the whole on a stone, in the same manner as color-men grind their colors. Nothing is then necessary, but to put the paste into some small mould, formed of cards, and rubbed over with white wax, to prevent it from adhering to them.

In regard to the smell of the China-ink, it arises from a little musk, which the Chinese add to the gum-water, and may easily be imitated. The figures seen on the sticks of China ink, are the particular marks of the manufacturers, who as in all other countries, are desirous of distinguishing whatever comes from their hands.

Dr. Lewis thinks, from the information of Father du Halde, that China ink is composed of nothing but lamp-black and animal glue. Having boiled a stick of China ink in several portions of water, in order to extract all the soluble parts; and having filtered the different liquors, which he evaporated in a stone vessel, he found that the liquors had the same odor as glue, and that they left, after evaporation, a pretty considerable quantity of a tenacious substance, which seemed to differ in nothing from common glue.

Colored Inks.

Few of these are used except red ink. The preparation of this is very simple, consisting either of decoctions of the different coloring or dying materials in water, and thickened with gum-arabic, or of colored metallic oxides, or insoluble powders, merely diffused in gum-water. The proportion of gum-arabic to be used, may be the same as for black writing ink. All that applies to the fixed or fugitive nature of the several articles used in dying may be applied in general to the use of the same substances as inks.

Red Ink is usually made by boiling about two ounces of Brazil wood in a pint of water, for a quarter of an hour, and adding to the decoction the requisite quantity of gum, and about half as much alum. The alum both heightens the color and makes it less fugitive. Probably a little madder would make it more durable.

Blue Ink may be made by diffusing Prussian blue or indigo through strong gum water.

Yellow Ink may be made by a solution of gamboge in gum-water.

Most of the common water-colored cakes diffused in water, will make sufficiently good colored inks for most purposes.

Inks of other colors may be made from a strong decoction of the ingredients used in dying, mixed with a little alum and gum-arabic. For example, a strong decoction, of Brazil wood with as much alum as it can dissolve, and a little gum, forms a good red ink. These processes consist in forming a lake, and retarding its precipitation by the gum.

On many occasions it is of importance to employ an ink indestructible by any process that will not equally destroy the material on which it is applied. Mr. Close has recommended for this purpose 25 grains of copal in powder dissolved in 200 grains of oil of lavender, by the assistance of gentle heat, and then mixed with 2 1-2 grains of lamp-black; and half a grain of indigo: or 120 grains of oil of lavender, 17 grains of copal, and 60 grains of vermillion. A little oil of lavender, or of turpentine, may be added, if the ink be found too thick. Mr. Sheldrake suggests, that a mixture of genuine asphaltum dissolved in oil of turpentine, amber, varnish, and lamp black, would be still superior.

When writing with common ink has been effaced by means of oxygenized muriatic acid, the vapor of sulphuret of ammonia, or immersion impregnated with this sulphuret will render it again legible. Or if the paper that contained the writing be put into a weak solution of prussiate of potash, and when it is thoroughly wet, a sulphuric acid be added to the liquor, so as to render it slightly acidulous, the same purpose will be answered.

Golden Ink. As writing, before the invention of printing, was the only method of transmitting to posterity the works and discoveries of celebrated men, it became in the fourteenth and fifteenth centuries an art much cultivated, and in which many persons excelled. The manuscripts of those periods contain writing, the neatness and regularity of which are astonishing. Transcribers were even acquainted with a method of ornamenting the initial letters with gold, which they applied in such a manner as to preserve all its splendor. Writing, by the invention of printing, having become of less importance, soon degenerated, and the secret of applying gold to paper and parchment, like many other arts, was at length lost. The Benedictines, however, rediscovered this secret, and specimens of the process, and parchment containing writing in gold letters, as brilliant as those so much admired in the ancient manuscripts, have been seen at the Abbey Saint-Germain-des-Pres, at Paris. This process may be exceedingly useful, and may furnish hints for improving some of the other arts, which are all connected, and mutually tend to promote each other.

Printers' Ink.

This is a very singular composition, partaking much of the nature of an oil varnish, but differing from it in the quality of adhering firmly to moistened paper, and in being to a considerable degree soluble in soap-water.

It is, when used by the printers, of the consistence of rather thin jelly, so that it may be smeared over the types readily and thinly, when applied by leather cushions, and it dries very speedily on the paper without running through to the other side, or passing the limits of the letter.

The method of making printers' ink is thus described by Dr. Lewis. Ten or twelve gallons of nut-oil are set over the fire in a large iron pot, and brought to boil. It is then stirred with an iron ladle, and whilst boiling, the inflammable vapor rising from it either takes fire of itself, or is kindled, and suffered to burn in this way for about half an hour, the pot being partially covered, so as to regulate the body of the flame, and consequently the heat communicated to the oil. It is frequently stirred during this time, that the whole may be heated equally, otherwise a part would be charred, and the rest left imperfect. The flame is then extinguished by entirely covering the pot. The oil by this process has much of its unctuous quality destroyed, and when cold is of the consistence of soft turpentine, and is then called varnish. After this it is made into ink by mixture with the requisite quantity of lamp-black, of which about two ounces and a half are sufficient for sixteen ounces of the prepared oil. The oil loses by the boiling about an eighth of its weight, and emits very offensive fumes. Several other additions are made to the oil during the boiling, such as crusts of bread, onions, and sometimes turpentine. These are kept secret by the preparers. The intention of them is more effectually to destroy part of the unctuous quality of oil, to give it more body to enable it to adhere better to the wetted paper, and to spread on the types neatly and uniformly.

Besides these additions, others are made by the printers, of which the most important is generally understood to be a little fine indigo in powder, to improve the beauty of the color.

Red printers' ink is made by adding to the varnish about half its weight of vermillion. A little carmine also improves the color.

Ink, *Sympathetic*, a liquor employed for writing on paper, so that it may retain its natural whiteness after the letters are formed, till it is held near the fire, rubbed with another liquor, or some other expedient is used to render the characters legible.

Sympathetic inks are prepared from various substances, such as bismuth, lead, &c. Thus, a solution of common sugar of lead in water, if employed with a clean pen, will remain concealed till it is wetted with a solution of the liver of sulphur, or is exposed to the vapors of such liquid; in which case it will assume a deeper or lighter brown shade, in proportion to the strength of the sulphureous gas. By the same process, words written with a solution of bismuth in spirit of nitre, will appear of a deep black color.

Another sympathetic ink may be easily prepared, by diluting oil of vitriol with a sufficient quantity of water, to prevent the paper from being corroded. Letters drawn with this fluid are invisible when dry, but, on being held near the fire, they assume a perfect black color. The juices of lemons or onions; a solution of sal ammoniac, &c. will answer a similar purpose, though their application is more difficult, and they afterwards require a greater degree of heat.

Ink, *removing the stains of.*—The stains of ink, on cloth, paper, or wood, may be removed by almost all acids; but those acids are to be preferred, which are least likely to injure the texture of the stained substance. The muriatic acid, diluted with five or six times its weight of water, may be applied to the spot, and after a minute or two, may be washed off, repeating the application as often as may be found necessary. But the vegetable acids are attended with less risk, and are equally effectual. A solution of the oxalic, citric (acid of lemons,) or tartareous acids, in water, may be applied to the most delicate fabrics without any danger of injuring them: and the same solutions will discharge writing, but not printing-ink. Hence they may be employed in cleaning books which have been defaced by writing on the margin, without impairing the text. Lemon-juice, and the juice of sorrel, will also remove ink-stains, but not so easily as the concrete acids of lemons, or citric acid.

Ink, *for the Rolling Press*, is made of linseed oil burnt in the same manner as that for common printing ink, and then mixed with Francfort black, and finely ground. There are no certain proportions which can be determined in this kind of ink; every workman adding oil or black to his ink as he thinks proper, in order to make it suit his purpose. Some, however, mix a portion of common boiled oil which has never been burnt; but this must necessarily be a bad practice, as such oil is apt to go through the paper; a fault very common in prints, especially if the paper is not very thick. No soap is added; because the ink is not cleared off from the copper plates with alkaline ley as in common printing, but with a brush dipped in oil.

[*Gallery of Nature and Art.*

Family Library.

In our last we mentioned that we should give a list of the subjects of the already voluminous and increasing Library published by the Messrs. Harper, of New York. At some future time, we intend to give an analysis of the whole work, in such a way as will enable our readers to see its nature, and in some measure to appreciate its value. The following is a list of the subjects of the several volumes:—

NOS.	VOLS.
1, 2, 3. Milman's History of the Jews, plates,	3
4, 5. Lockhart's Life of Napoleon Bonaparte,	2
6. Southey's Life of Nelson,	1
7. Williams's Life of Alexander the Great,	1
8. Natural History of Insects,	1
9. Galt's Life of Lord Byron,	1
10. Bush's Life of Mohammed,	1
11. Scott on Demenology and Witchcraft,	1
12, 13 Gleig's Bible History,	2
14. Discovery & Adventure in the Polar Seas,	1
15. Croly's Life of George IV.	1
16. Discovery & Adventure in Africa, engvs.	1
17, 18, 19. Lives of Painters, Sculptors, &c.	3
20. History of Chivalry and the Crusades,	1
21, 22. Bell's Life of Mary, Queen of Scots,	2
23. Russell's Ancient and Modern Egypt,	1
24. Fletcher's History of Poland,	1
25. Smith's Festivals, Games, Amusements,	1
26. Brewster's Life of Sir Isaac Newton,	1
27. Russell's Palestine, or the Holy Land,	1
28. Memes's Memoirs of Empress Josephine,	1
29. The Court and Camp of Bonaparte,	1
30. Lives of Early Navigators,	1
31. Description of Pitcairn s Island, &c.	1
32. Turner's Sacred History,	1
33, 34. Memoirs of Female Sovereigns,	2
35, 36. Lander's Africa,	2
37. Abercrombie on the Intellectual Powers,	1
38, 39, 40. Lives of Celebrated Travellers,	3
41, 42, Life of Frederic II., King of Prussia,	2
43, 44. Sketches from Venetian History,	2
45, 46. Thatcher's Indian Lives,	2
47, 48, 49. History of India,	3
50. Brewsters Letters on Natural Magic,	1
51, 52. History of Ireland,	2
53. Discoveries on the N. American Coasts,	1
54. Humboldt's Travels,	1
55, 56. Euler's Letters on Natural Philosophy,	2
57. Mudie's Guide to Observation of Nature,	1
58. James's Life of Charlemagne,	1

Salt Formation in the Valley of the Ohio.

The fifth article in the last number of the Journal of Science and Arts is entitled 'Observations on the Saliferous Rock Formation in the Valley of the Ohio,' by Dr. S. P. Hildreth, of Marietta. It conveys much curious and valuable information, parts of which we copy for the benefit of our readers.

'For many years after settlements had been commenced west of the Alleghany mountains, the inhabitants were entirely dependent on their brethren of the Appalachian ridge, for salt; an article so necessary to the existence and comfort of civilized man. It was transported, with immense labor, through narrow defiles, and almost impassable roads across the mountain ranges, on the backs of horses. Long trains of these useful animals might be seen toiling up the steep sides of the mountains, their uncouth pack-saddles laden with kegs of salt, iron ware, and other merchandize, destined for the use of the early settlers.—This, for a long time, was the only mode of transportation. At length, rude roads were constructed which could be traversed with wagons, and they caused some reduction in the cost of transportation; but it was not until the completion of the 'National, or Cumberland Road,' that travelling in carriages could be effected with either ease or safety. From the year 1788 to the year 1800, the price of salt varied from four to eight dollars per bushel; and it was supposed by the inhabitants, that its cost would always prove a serious drawback on the prosperity of the country. The upward navigation of the Ohio and Mississippi rivers was long and tedious, requiring from four to six months to accomplish the voyage from New Orleans, and the outlet being owned by a foreign nation, forbade the expectation of relief from that quarter. Iron, so indispensable in agricultural pursuits, was another heavy item of expense, and was, for many years, transported in the same tedious way, until iron ore was discovered in the Laurel Mountains, and furnaces were erected. From that period, they have been gradually extending down the river, until no portion of the United States is more cheaply or more abundantly supplied with iron than the valley of the Ohio. Salt, so valuable and so scarce in these early days, as to be looked upon almost as a luxury, has now become so abundant as to sell for half a cent per pound. The all-wise and beneficent Creator, who formed this earth for the habitation of man, has stored it with all things necessary for his comfort and happiness. In every region remote from the ocean, he has deposited in the bowels of the earth, vast magazines of salt. The interior of Africa, Asia, and America, contains, in the form of rock or native salt, or of springs, fountains, or lakes, or of efflorescences, a sufficient supply for the wants of all the inhabitants. The valley of the Ohio, from its head water to Shawneetown in Illinois, may be said to be based on a saliferous rock, affording an abundance of water, highly charged with muriate of soda, and affording it in abundance, wherever perforations have been made, of a sufficient depth to reach the precious deposit. There are many evidences of its extending along the course of the Alleghany range for more than one hundred miles in breadth, and for several hundred in length. The salt rock commences near its western and northern base, in the coal and sandstone region, and extends as far north and west, as these two interesting formations are found. In Ohio, sandstone and coal are abundant from the mouth of Big Beaver, to some miles below the mouth of the Scioto, and they cover a tract of country, between these two points, from forty to eighty miles in width on the northern bank of Ohio. If the salt deposit extends as far north as Lake Erie, it is probably very thin, or else it descends deep into the earth; as few or no indications of salt are found north of these boundaries.—A few miles below the mouth of Big Sandy, the Ohio takes a more westerly course, and the sandstone is left on its southern shore. At the western and northern termination of the sand rock, the lime rock commences, and continues with little interruption to the Mississippi river, and the great northern lakes. Salt water can doubtless be found in all that region, where sandstone prevails, as the two formations are known to accompany each other. The super-incumbent strata, composed of sandstone, argillite, marl-slate, &c., as will be more fully shown in another place, varies in thickness from five hundred to twelve hundred feet; and it appears to sink deeper into the earth, on or near the Ohio, as the salt rock has reached at less and less depth, as we ascend the streams discharging their waters into this river. This is especially the fact with the salt wells in the Muskingum and Big Kenhawa rivers. A few miles above the falls at Zanesville, the salt rock is found short of two hundred and fifty feet, while thirty miles below, it is eight hundred and fifty feet to the lower salt stratum. From several circumstances, it would seem to be a fact, that the ancient inhabitants of this valley were not unacquainted with the use and the manufacture of salt. In wells at the Scioto Salines, and at the Blue Licks in Kentucky, the beds of furnaces, and large fragments of broken pots, made of coarse earthen ware, were repeatedly found, at considerable depths below the present surface; affording strong presumptive evidence, that the quality of the water was known, and that it had been applied to the uses of man, in ages long since passed away. Tusks and grinders of the elephant and mastodon, were also found in digging the salt wells at both these places. The attraction of wild beasts to these salines, probably first brought them to the notice of man. At the licks on the Kenhawa, several indications were discovered of their having been in use, long before they were known to any white man.

The first attempt at manufacturing salt in Ohio, was made about the year 1798, at what is now called the 'Old Scioto salt-works.' This spot is in Jackson county, on the banks of a small creek, called Salt Creek, a tributary of the Sciota. The wells were dug near the creek to the depth of twenty or thirty feet, and the salt water rose into the excavations from crevices in the rock below. The present mode of piercing the rocks was not known until many years after. The water thus procured was but weakly impregnated with salt, and required from six to eight hundred gallons to make a bushel of fifty pounds weight. It was also very dark colored, and filled with the bittern, composed chiefly of muriates of lime and magnesia; the manufacturers not giving it time to drain, but transferring it immediately from the kettles to the pack-horses of the purchasers, who, transporting it into the various settlements, sold it to the inhabitants for three and four dollars per bushel, as late as the year 1808. This saline was thought to be so important to the country, that when this territory was erected into a state in the year 1802, a tract of six miles square was set apart by Congress for the use of the state embracing this saline. Two other tracts of six hundred and forty acres each, were also reserved for the same purpose, one on Salt Creek in Muskingum county, and one in Delaware county, as too valuable to fall into the hands of individuals, lest they should create a monopoly of the article; these being the only places then known in Ohio where salt could be made. A special act was passed by the Legislature, in the year 1804, regulating the management of these salines, and an agent appointed to rent out the small lots to manufacturers, laid out on the borders of the creeks where salt water was found most abundant. The rent demanded was sixteen cents per year on each gallon of capacity in the kettles, and no one person was allowed to use more than four thousand, nor less than six hundred gallons in each furnace, guarding here also carefully against monopoly. The agent was authorized to inspect the salt before it was offered for sale, and to lay off suitable wood lots for the use of the furnace holders, free of expense. The amount manufactured in any one year, never produced a revenue to exceed five hundred dollars. As other and much better saline springs were discovered on the navigable streams, the works at the agencies went gradually to decay; and finally in the year 1826, the 'salt reservations' were sold, and the proceeds placed in the treasury of the state. In the year 1808, a new era commenced in the manufacture of salt. Previously to this time, the water had been obtained from wells sunk no deeper than to perforate the superincumbent earth to the rocks below, through some crevice in which it had made its way to the surface. But now, attempts were made to come at the sources of the fountain, by boring, or drilling through the rock formations, to the saline deposit itself. The first trial of this kind was made on the Big Kenhawa, six miles above Charleston, and only to the depth of seventy or eighty feet; on further trials, it was discovered, that the water became stronger as they descended, and the first wells were gradually deepened, to three hundred and fifty feet, with the most satisfactory results. Water was obtained of such strength that seventy-five gallons would make a bushel of salt of fifty pounds weight, or as much as four hundred gallons from the old surface wells; producing an immense saving of time and labor to the manufacturer, and a much better article to the consumer. The space, now occupied by the salt wells, extends to the shores of the Kenhawa, and is about seventy miles from the mouth of the river.—The upper wells reach the salt rock at two hundred and fifty feet. The lower wells strike it at a number of feet deeper, the rock dipping to the north as it recedes from the mountains, or descends the river.'—[*Natchez paper.*

Science and Learning.

The noblest employment of the mind of man is the study of the works of his Creator.

To him whom the science of nature delighteth, every object bringeth a proof of his God; and every thing that proveth this, giveth cause of adoration.

His mind is lifted up to heaven every moment; his life is one continual act of devotion.

Casteth he his eyes towards the clouds, findeth he not the heavens full of wonders? Looketh he down to the earth, doth not the worm proclaim to him—Could less than Omnipotence have formed me?

While the planets perform their courses—while the sun remaineth in his place—while the comet wandereth through the liquid air, and returneth to his destined road again: who but thy God, oh, man! could have formed them? what but infinite wisdom could have appointed them their laws?

Behold how awful their splendor! yet do they not diminish: lo! how rapid their motion; yet one runneth not in the way of another.

Look down upon the earth, and see her produce; examine her bowels, and behold what they contain: hath not wisdom and power ordained the whole?

Who biddeth the grass to spring up?—who watereth it at its due season? Behold, the ox croppeth it; the horse and the sheep, feed they not upon it? who is he that provideth it for them?

Who giveth increase to the corn which thou sowest? who returneth it to thee a thousand fold?

Who ripeneth for thee the olive in its time? and the grape also, though thou knowest not the cause of it?

Can the meanest fly create itself? or couldst thou, being ought less than God, couldst thou have fashioned it?

The beasts feel that they exist, but they wonder not at it: they rejoice in their life, but they know not that it shall end; each performeth its course in succession: nor is there a loss of one species in a thousand generations.

Thou who seest the whole as admirable as its parts, canst thou better employ thine eye than in tracing out thy Creator's greatness in them—thy mind than in examining their wonders?

Power and mercy are displayed in their formation; justice and goodness shine forth in the provision that is made for them; all are happy in their several ways.

What is the study of words compared with this? Wherein is knowledge but in the study of Nature?

When thou hast adored the fabric, inquire into its use; for know, the earth produceth nothing but may be of good to thee: are not food and raiment, and the remedies for thy diseases, all derived from the earth alone?

Who is wise then but he that knoweth it? Who hath understanding but he that contemplateth it? for the rest, whatever science hath most utility—whatever knowledge hath least vanity, prefer these unto others, and profit of them for the sake of thy neighbor.

To live and to die—to command and to obey—to do and to suffer, are not these all that thou hast further to care about? mortality shall teach thee these; the Economy of Life shall lay them before thee.

Behold they are written in thine heart, and thou needest only to be reminded of them; they are easy of conception; be attentive, and thou shalt retain them.

All other sciences are vain, all other knowledge is boast: lo! it is not necessary or beneficial to man, nor doth it make him more good or more honest.

Piety to thy God, and benevolence to thy fellow creatures, are they not thy great duties? What shall teach thee the one, or what shall inform thee of the other, like unto the study of his works?

Visibility of High Land.

The Peak of Teneriffe has often been observed at the distance of 124, 131, and even 138 miles; and the summit of Mowna-Roa, in the Sandwich Isles, which is probably 14,000 feet high, has been seen, at a period when it was destitute of snow, skirting the horizon from a distance of 183 miles. This is the most striking example yet known of the visibility of high land, and is the more remarkable that the object was negatively seen.

BOTANY.

Common fig-tree.

This rises with a long stem branching 15 or 20 feet high, with large palmated or hand-shaped leaves. Of this there is a number of varieties; as the common fig, a large oblong, dark purplish blue fruit, which ripens in August either on standards or walls, and the tree carries a great quantity of fruit. The brown or chesnut fig; a large globular, chesnut-colored fruit, having a purplish delicious pulp, ripening in July and August. The black Ischia fig; a middle-sized, shortish, flat-crowned, blackish fruit, having a bright pulp, ripening in the middle of August. The green Ischia fig; a large, oblong, globular-headed, greenish fruit, slightly stained by the pulp to a reddish brown color, ripens in the end of August. The brown Ischia fig; a small, pyramidal, brownish yellow fruit, having a purplish very rich pulp, ripening in August and September. The Malta fig; a small flat-topped brown fruit, ripening in the middle of August or beginning of September. The round brown Naples fig; a globular, middle-sized, light-brown fruit, and brownish pulp, ripe by the end of August. The long brown Naples fig; a long dark-brown fruit, having a reddish pulp, ripe in September. The great blue fig; a large blue fruit, having a fine red pulp. The black Genoa fig; a large-pear-shaped, black-colored fruit, with a bright red pulp, ripe in August.

The last species is that most frequently cultivated in this country, and the only one which does not require to be kept in a store. It may be propagated either by suckers arising from the roots, by layers, or cuttings. The suckers are to be taken off as low down as possible; trim off any ragged part at bottom, leaving the tops entire, especially if for standards, and plant them in nursery lines, at two or three feet distance from each other, or they may at once be planted where they are to remain, observing, that if they are designed for walls or espaliers, they may be headed to six or eight inches in March, the more effectually to force out lateral shoots near the bottom; but if intended for standards, they must not be topped, but trained with a stem, not less than 15 or 18 inches for dwarf standards, and four, five, or six feet, for full standards. They must then be suffered to form a head; observing, that whether against walls, espaliers, or standards, the branches or shoots must never be shortened, unless to procure a necessary supply of wood; for the fruit is always produced on the upper parts of the young shoots; and if these are cut off, no fruit can be expected. The best season for propagating these trees by layers is in autumn; but it may be also done any time from October to March, or to April. Choose the young pliable lower shoots from the fruitful branches; lay them in the usual way, covering the bodies of the layers three or four inches deep in the ground, keeping the top entire, and as upright as possible, and they will be rooted, and fit to separate from the parent in autumn; when they may be planted either in the nursery, or where they are to remain, managing them as above-directed. The time for propagating by cutting is either in autumn, at the fall of the leaf, or any time in March. Choose well-ripened shoots of the preceding summer, short, and of robust growth, from about 12 to 15 inches long, having an inch or two of the two-years' wood at their base, the tops left entire, and plant them six or eight inches deep, in a bed or border of good earth, in rows two feet asunder; and when planted in autumn, it will be eligible to protect their tops in time of hard frost, the first winter, with any kind of small loose litter.

That part of the history of the fig-tree, which for many ages was so enigmatical, namely, the caprification, as it is called, is particularly worthy of attention, not only as a singular phenomenon in itself, but as it has furnished one of the most convincing proofs of the reality of the sexes in plants. In brief it is this; the flowers of fig-tree are situated within a pulpy receptacle, which we call the fig or fruit; of these receptacles, in the wild fig-tree, some have male flowers only, and others have male and female, both distinct, though placed in the same receptacle In the cultivated fig, these are found to contain only female flowers, which are fecundated by means of a kind of gnat bred in the fruit of the wild fig-trees, which pierces that of the cultivated, in order to deposit its eggs within; at the same time diffusing within the receptacle the farina of the male flowers. Without this operation the fruit may ripen, but no effective seeds are produced. Hence the garden fig can only be propagated by layers and cuttings in those countries where the wild fig is not known. The process of thus ripening the fruit, in the Oriental countries, is not left to nature, but is managed with great art, and different degrees of dexterity, so as to reward the skilful husbandman with a much larger increase of fruit than would otherwise be produced. A tree of the same size which in Provence, where caprification is not practised, may produce about 25 pounds of fruit, will by that art, in the Grecian islands, bring ten times that quantity.

Figs are a considerable article in the materia medica, chiefly employed in emollient cataplasm and pectoral decoctions. The best are those which come from Turkey. Many are also brought from the south of France, where they prepare them in the following manner. The fruit is first dipped in scalding-hot ley made of the ashes of the fig-tree, and then dried in the sun. Hence these figs stick to the hands, and scour them like lixivial salts; and for the same reason they purge gently, without griping. They are moderately nutrimental, grateful to the stomach and easier to digest than any other of the sweet fruits. They have been said to produce lice when eaten as a common food; but this seems to be entirely without foundation. The reason of this supposition seems to be, that in countries where they grow naturally, they make the principal food of the poor people, who are generally troubled with these vermin. The wood of the sycamore is not subject to rot, and has therefore been used for making coffins in which embalmed bodies are put. Mr. Hasselquist affirms, that he saw in Egypt coffins made of wood, which had been preserved sound for 2000 years.

Baobab, or Calabash.

This is found chiefly on the banks of the Senegal, and has so near a resemblance in its enormous extent and valuable properties to the Banian, that we shall only glance at a few of its peculiar properties. It has a trunk of a prodigious size, spreads its branches wide enough to afford protection to a whole village of inhabitants, and is supposed to possess a greater longevity than any other tree whatever, being calculated to require not less than a thousand years before it attains maturity.

We know of but one species, though Isert tells us there are many, the Adansonia digitata, so called from the finger-like divisions of its leaves. It bears a gourd, containing a very pleasant sub-acid fruit, which forms a considerable part of the food of the negro-tribes; who like the Indians, with respect to the Banian, observe it with a kind of religious veneration: and watch devotionally for the opening of its flowers at sun-rise. It adorns, with its verdant and compressed vaults and arches, the top of Cape Verd, which is hence said to take its name; and its hollow trunk sometimes serves for a temple or hall to a numerous assembly of natives. It is not however lofty. The one observed by Golberry was not more than twenty four feet in height, though thirty-four in diameter, or a hundred and four in circumference. Darwin asserts that it sometimes rises to seventy feet in height, but we know of no instance of such a growth.

Banana-tree.—Plaintain-tree.

The genus Musa includes three known species, namely, M. Paradisiaca, or Plantain-tree; M. Sapientum, or Banana; and M. Troglytarum. The two former bear an excellent food, and are in many other respects peculiarly worthy of attention. The last has a scarlet berry, but not eatable.

1. Plaintain-tree.

This is cultivated in all the islands of the West Indies, where the fruit serves the Indians for bread; and some of the white people also prefer it to most other things, especially to the yams and casada bread. The plant rises with a soft stalk 15 or 20 feet high; the lower part of the stalk is often as large as a man's thigh, diminishing gradually to the top, where the leaves come out on every side; these are often eight feet long, and from two to three broad, with a strong fleshy mid-rib, and a great number of transverse veins running from the mid-rib to the borders. The leaves are thin and tender, so that where they are exposed to the open air, they are generally torn by the wind; for as they are large, the wind has great power against them; these leaves come out from the centre of the stalk, and are rolled up at their first appearance: but when they are advanced above the stalk, they expand and turn backward. As these leaves come up rolled in this manner, their advance is so quick, that their growth may almost be discovered by the naked eye; and if a fine line is drawn across level with the top of the leaf, in an hour the leaf will be near an inch above it. When the plant is grown to its full height, the spikes of the flowers appear in the centre, which is often near four feet long. The flowers come out in bunches, those in the lower part of the spike being the largest; the others diminish in their size upward. Each of these bunches is covered with a sheath of a fine purple color, which drops off when the flowers open. The upper part of the spike is made up of male flowers, which are not succeeded by fruit, but fall off with their covers. The fruit or plantain is about a foot long, and an inch and a half or two inches diameter; it is at first green but when ripe, pale yellow. The skin is tough; and within is a soft pulp of a luscious sweet flavor. The spikes of the fruit are often so large as to weigh upwards of 40lb. The fruit of this sort is generally cut before it is ripe. The green skin is pulled off, and the heart is roasted in a clear fire for a few minutes, and frequently turned; it is then scraped, and served up as a bread. Boiled plantains are not so palatable.

This tree is cultivated on a very extensive scale in Jamacia, without the fruit of which, Dr. Wright says, the island would scarcely be habitable, as no species of provision could supply their place. Even flour or bread itself would be less agreeable, and less able to support the laborious negro, so as to enable him to do his business, or to keep in health. Plantains also fatten horses, cattle, swine, dogs, fowls, and other domestic animals. The leaves being smooth and soft, are employed as dressings after blisters. The water from off the trunk is astringent, and employed by some to check diarrhœas. Every other part of the tree is useful in different parts of rural economy. The leaves are used for napkins and table-cloths, and are food for hogs.

2. Banana-tree.

This species differs from the preceding in having its stalks marked with dark purple stripes and spots. The fruit is shorter, straighter, and rounder; the pulp is softer, and of a more luscious taste. It is never eaten green; but when ripe it is very agreeable, either eaten raw or fried in slices, as fritters; and is relished by all ranks of people in the West Indies. Both these plants were carried to the West Indies from the Canary Islands, whither, it is believed, they had been brought from Guinea, where they grow naturally. They are also cultivated in Egypt, and in most other hot countries, where they grow to perfection in about ten months from their first planting to the ripening of their fruit. When their stalks are cut down, several suckers come up from the roots, which in six or eight months produce fruit; so that by cutting down the stalks at different times, there is a constant succession of fruit all the year. In Europe some of these plants are raised by gentlemen who have hot-houses capacious enough for their reception, in many of which they have ripened their fruit very well; but as they grow very tall, and their leaves are large, they require more room in the stove than most people are willing to allow them. They are propagated by suckers, which come from the roots of those plants that have fruited; and many times the younger plants, when stinted in growth, also put out suckers. The fruit of this tree is four or five inches long, of the size and shape of a middling cucumber, and of a highly-grateful flavor; the leaves are two yards long, and a foot broad in the middle; they join to the top of the body of the tree, and often contain in their cavities a great quantity of water, which runs upon a small incision being made into the tree, at the junction of the leaves. Bananas grow in great bunches, that weigh 12lbs. and upwards. The body of the tree is so porous as not to merit the name of wood; the tree is only perennial by its roots, and dies down to the ground every autumn. When the natives of the West Indies (says Labat) undertake a voyage, they make provision of a paste of bananas, which, in case of need, serves for nourishment and drink; for this purpose they take ripe bananas, and having squeezed them through a fine sieve, form the solid fruit into small loaves, which are dried in the sun or in hot ashes, after being previously wrapped up in the leaves of Indian flowering-reed.—[*Gallery of Nature and Art.*

Human Remains Discovered.

A discovery highly interesting to the antiquarian has brought to light the remains of warriors whose powerful arms, at least 1800 years ago, gave laws to our ancestors. Some workmen employed in digging for stones on Limloe-hill, a few miles from Royston, Cambridgeshire, discovered the remains of several bodies, one of which in a most perfect state, was timely saved from their mutilation. It was carefully taken up by Mr. Deck, practical chemist, of Cambridge, in whose possession it now is, and will form very nearly an entire skeleton. This extraordinary preservation of perishable remains from so remote a period is in a great measure to be attributed to its being found imbedded upon a dry chalk soil; its position was east and west, with the left arm across the body, and the right arm extended by its side. Upon the breast were numerous pieces of broken pottery, evidently the remains of urns of fine workmanship. and several coins of Claudius, and Vespasian, and Faustina.

Ancient Brass Medal.

A small brass medal has been found in a field recently ploughed up near Glastonbury, Devon. The observe represents a venerable half-length figure of St Patrick, attired in a cope, with a rich mitre on his head; his right hand is raised in the act of blessing; his left supports the archiepiscopal cross. The inscription, 'St. Patr. Vet. Scotiœ Sev. Hiber. Ap.' The reverse presents the half-length figure of an Abbess, holding a lily in her right hand, and the crosier turned from her, resting on her left shoulder, with this inscription: 'S Brig. V. Hiber, SS. Insvlœ. Pat.' St. Bridget, or Bride, died about the middle of the sixth century.

Discovery of a Roman Relic.

As the workmen were engaged in removing some old buildings in the Mint Yard, York, (where it is intended to form the new street from Blake street to Bootham-bar,) they came to a flat stone about three feet long and two feet broad, which on removing displayed on the under side a Roman inscription, every letter of which was perfect, and surrounded by curious carving in equal preservation; DEO' SANCTO SERAPI TEMPLVM ASO LO' FECIT CL' HERONYMIANVS' LEG LEG' VI' VICIT'. The inscription may be thus translated—'This temple, sacred to the God Serapis, was erected (A Solo) from the ground, by Claudius Hieronymianus, legate or lieutenant of the Sixth Conquering Legion.' This curious piece of ancient sculpture is supposed, from the inscription, to be nearly 1700 years old. It is at present deposited in one of the rooms at the Guild-hall.—[*York Paper.*

Ancient Mosaic Table.

An ancient Mosaic table has just been found at Rome, in digging for the foundation of the new front of the church of Santo Rocca, in the Strada Ripetta. It represents Bacchanalian subjects, in shades of black and white. The most curious circumstance, however, attending this discovery is, that the table was found at the depth of 15 feet very near the Tiber, so that the bed of the river must have risen considerably since the time of the ancient Romans.

Holt's Well.

Mr. Holt, of New York, has already drilled his well 640 feet below the surface of the ground. On Saturday afternoon his drill completely perforated the immense rock, (510 feet thick,) and pure water gushed forth in abundance. It has been stated that he will be enabled to supply all the lower part of the city. If the fountain is so inexhaustible, the advantages derived therefrom by the citizens will be incalculable. At the present time, nearly all the water used in the southern part of the city, is carried from the north, and peddled out by the measure.

Many have sneered at the efforts of Mr. Holt, and endeavored to dissuade him from his purpose; but now, ashamed, they are silent.

Saturation.

Some substances unite in all proportions.—Such, for example, are acids in general, and some other salts with water; and many of the metals with each other. But there are likewise many substances which cannot be dissolved in a fluid, at a settled temperature, in any quantity beyond a certain proportion. Thus water will dissolve only about one-third of its weight of common salt, and if more be added, it will remain solid. A fluid, which holds in solution as much of any substance as it can dissolve, is said to be saturated with it. But saturation with one substance does not deprive the fluid of its power of acting on and dissolving some other bodies, and in many cases it increases this power. For example, water saturated with salt will dissolve sugar; and water saturated with carbonic acid will dissolve iron, though without this addition its action on this metal is scarcely perceptible.

QUESTIONS

on the last number of the lyceum.

From what source are the inhabitants of the Molucca Islands furnished with flour?

How many can be supported by the produce of one acre?

How many months in the year does the bread-tree bear fruit?

What is the process of these islanders of making bread?

What plant furnishes milk for the inhabitants?

Have these people a taste for dress?

In what way are their canoes made?

What artificial ornaments do they use?

How long before Christ did the Huns flourish?

What was their mode of warfare?

What was the skill of the Parthians in the management of the horse?

What other ancient nations were skilful in the management of the horse?

What kind of horses were used by the Thracians?

What animals were instructed by Bisset, and with what success?

What amount of capital is invested in factories in Lowell?

In what can the wicks of candles be steeped, to improve their burning?

What is the extent of the gold region in the Cherokee country?

Have any questioned whether a love for music was natural?

What length of yarn can be spun upon one mill in Manchester in a week?

In what manner is gold leaf formed?

What material is used for manufacturing an improved hone?

What is every man's proper business?

Which will contribute most to a person's happiness, consulting his own pleasure merely, or extending his feelings and efforts to others?

What five important sources of happiness are worthy of attention?

How many fountains in Paris are furnished with water?

During what months is the greatest mortality in Paris?

In what months are there the greatest number of births?